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IS 10248 (1982): Cylindrical Pins with Internal Threads
[PGD 31: Bolts, Nuts and Fasteners Accessories]

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IS : 10248 - 1982

(Reaffirmed 2001)

Indian Standard

SPECIFICATION FOR CYLINDRICAL PINS WITH INTERNAL THREADS

1. Scope — Covers the requirements of cylindrical pins with internal threads in the diameter range 6 to 50 mm.

2. Types — The cylindrical pins with internal threads shall be of the following two types:

Type A — Unhardened

Type B — Hardened

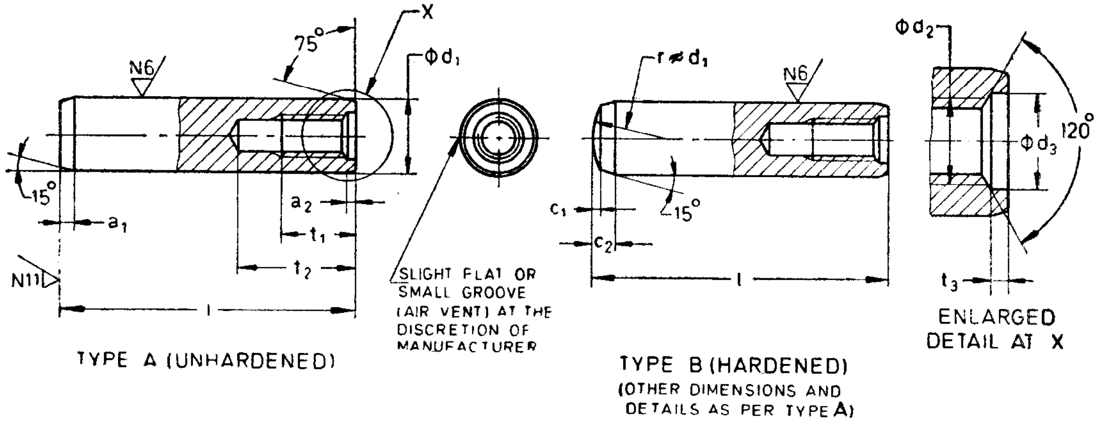
3. Dimensions and Tolerances

3.1 The dimensions and tolerances for cylindrical pins with internal threads (Types A and B) shall be as given in Table 1.

3.2 The preferred length-diameter combinations for cylindrical pins with internal threads are given in Table 2.

TABLE 1 DIMENSIONS AND TOLERANCES FOR CYLINDRICAL PINS

All dimensions in millimetres.


X
75°
Φd₁
N6
15°
a₂
a₁
t₁
t₂
N11
l
SLIGHT FLAT OR SMALL GROOVE (AIR VENT) AT THE DISCRETION OF MANUFACTURER
TYPE A (UNHARDENED)
r ≈ d₁
N6
c₁
15°
c₂
l
TYPE B (HARDENED) (OTHER DIMENSIONS AND DETAILS AS PER TYPE A)
Φd₂
120°
Φd₃
t₃
ENLARGED DETAIL AT X

Nominal Dia d_1 m6 or h8*	6	8	10	12	14	16	20	25	30	40	50
a_1 ≈	1·2	1·6	2	2·5	2·5	3	3·5	4	5	6·3	8
a_2 ≈	0·8	1	1·2	1·6	1·8	2	2·5	3	4	5	6·3
c_1 ≈	0·6	0·8	1	1·2	1·4	1·6	2	2·5	3	4	5
c_2 ≈	2·1	2·6	3	3·8	4	4·7	6	6	7	8	10
d_2	M4	M5	M6	M6	M8	M8	M10	M16	M20	M20	M24
d_3	4·3	5·3	6·4	6·4	8·4	8·4	10·5	17	21	21	25
t_1	6	8	10	10	12	12	16	24	30	30	38
t_2 *Min*	10	12	16	16	20	20	25	34	42	42	50
t_3	1	1·2	1·2	1·2	1·2	1·5	1·5	2	2	2·5	2·5

* Tolerance h8 may also be used at the request of the purchaser.

Bolts, Nuts and Fasteners Accessories Sectional Committee, EDC 27 [Ref : Doc: EDC 27 (3692)]

Adopted 27 July 1982

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Gr 2

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NEW DELHI 110002

TABLE 2 PREFERRED LENGTH — DIAMETER COMBINATIONS FOR CYLINDRICAL PINS

(*Clause* 3.2)

All dimensions in millimetres.

NOMINAL LENGTH l js15	NOMINAL DIAMETER d_1									
	6	8	10	12	16	20	25	30	40	50
16										
20										
25										
30										
35										
40										
45										
50										
55										
60										
65										
70										
75										
80										
90										
100										
110										
120										
130										
140										
150										
160										
170										
180										
190										
200										

Note 1 — Preferred length - diameters combinations are between the stepped bold lines.

Note 2 — For nominal lengths above 200 mm, steps of 20 mm may be used.

3.3 The tolerances for form and position shall be according to ' T ' grade of accuracy to IS : 2102 (Part II) ' General Tolerances for dimensions and form and position: Part II General tolerances for form and position (*second revision*) (*under preparation*)'.

3.4 The internal threads shall conform to 6H tolerance of IS : 4218 (Part IV)-1976 ' Specification for ISO metric screw threads: Part IV Tolerancing system '.

4. Material

4.1 Type A pins (unhardened) shall be manufactured from free cutting steel to IS : 4431-1978 ' Specification for carbon and carbon-manganese free-cutting steel (*first revision*)'.

4.2 Type B pins (hardened) shall be made from steel having a minimum tensile strength of 600 N/mm^2.

5. Hardness — Type B pins shall have a surface hardness of 60±2 HRC [See IS : 1586-1968 ' Method for rockwell Hardness test (B and C scales) for steel '].

6. Designation

6.1 Cylindrical pins with internal threads shall be designated by the name, type (A or B), nominal diameter tolerance on nominal diameter, nominal length, and the number of the standard.

Example:

A cylindrical pin with internal thread, Type A of nominal diameter $d_1=6$ mm, tolerance on nominal diameter as m 6 and nominal length $l=20$ mm shall be designated as:

Cylindrical Pin A6m6 × 20 IS : 10248

7. Workmanship and Finish — All pins shall be manufactured free from burrs, scales and tool marks.

8. Sampling and Acceptance Criteria — Unless otherwise agreed to between the purchaser and the manufacturer, the method of sampling and acceptance criteria shall be in accordance with IS : 2614-1969 'Methods for sampling of fasteners (*first revision*) except for major and minor defects (*see* **8.1**) and acceptable quality levels (A Q L) (*see* **8.2**) listed in this standard.

8.1 Major and minor defects are given below:

Major Defects	Minor Defects
Nominal diameter 'd_1'	Nominal length l
Thread limits	Thread length t_1 Concentricity

8.2 *Acceptable Quality Levels (AQL)* — The acceptable quality levels for pins covered in this standard shall be as given below:

Characteristics	Acceptable quality levels (AQL) percent	
	For Testing for Defects	For Testing for Defectives
Major defect	1	1·5
Minor defect	1·5	4

Note — For loosening the cylindrical pins, screws with minimum property class 10.9 are required. For cylindrical pins with lengths above $6 \times d_1$, there is a possibility that even with screw of property class 10.9, the force required may go beyond yield point of the screw.

9. General Requirements

9.1 Unless the purchaser has specified specific treatment at the time of making enquiry or at the time of placing the order, the pins shall be supplied in a well cleaned condition and provided with a thin film of oil to protect against rust.

10. Packing — The cylindrical pins with internal threads shall be packed in cartons or boxes in quantities of 10, 25, 50 or 100. The size, quantity and the manufacturer's name or trade-mark shall be clearly indicated on the cartons or boxes.

11. ISI Certification Marking — Details available with Indian Standards Institution.

EXPLANATORY NOTE

Cylindrical pins with internal threads are used as dowel pins in blind holes. The pins are provided with a flat or small groove along the length to facilitate escape of air from the blind hole for easy driving in of the pins. When required to be withdrawn, from the blind holes, the pins are extracted with the help of internal threads provided therein.

In the preparation of the standard, considerable assistance has been derived from:

DIN 7979-1977 'Parallel pins with internal threads' issued by Deutsches Institut fur Normung.

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